

forming a ball at a tip of a metal wire by an electric spark similarly to wire bonding and forming a bump by thermocompression-bonding the formed ball to an electrode of an electronic component with supersonic waves 5 by means of a capillary;

mounting the electronic component on a circuit board by aligning in position the electrode of the electronic component with an electrode of the board with interposition of an anisotropic conductive layer in which 10 an insulating resin mixed with an inorganic filler is mixed with a conductive particle; and

subsequently bonding the electronic component to the circuit board by hardening the insulating resin of the anisotropic conductive layer interposed between the 15 electronic component and the circuit board while correcting warp of the board and crushing the bump with a pressure force of not smaller than 20 gf per bump applied to the electronic component against the circuit board by means of a tool and heat applied from the electronic component side 20 or heat applied from the board side or heat applied from both the electronic component side and the board side, so that the electrode of the electronic component is electrically connected with the electrode of the circuit board.

25 According to a second aspect of the present

invention, there is provided an electronic component mounting method as defined in the first aspect, wherein, before mounting the electronic component on the board by aligning in position the electrode of the electronic component with the electrode of the circuit board with interposition of the anisotropic conductive layer after the formation of the bump,

5 a tip of the formed bump is shaped so as to prevent collapse of a neck portion of the bump by once 10 pressurizing the bump with a load of not greater than 20 gf.

According to a third aspect of the present invention, there is provided an electronic component mounting method as defined in the first or second aspect, wherein

15 the insulating resin of the anisotropic conductive layer is an insulative thermosetting epoxy resin, and an amount of the inorganic filler mixed with this insulative thermosetting epoxy resin is 5 to 90 wt% of the insulative thermosetting epoxy resin.

20 According to a fourth aspect of the present invention, there is provided an electronic component mounting method as defined in any one of the first through third aspects, wherein

25 the insulating resin of the anisotropic conductive layer is in a liquid form when applied to the

board, and after semi-solidifying the resin by hardening the liquid of the applied insulating resin with the board placed in a furnace or by pressurizing the liquid of the applied insulating resin by means of a heated tool after 5 the application to the board, the electronic component is mounted on the board.

According to a fifth aspect of the present invention, there is provided an electronic component mounting method comprising:

10 forming a ball at a tip of a metal wire by an electric spark similarly to wire bonding and forming a gold bump by thermocompression-bonding the formed ball to an electrode of an electronic component with supersonic waves by means of a capillary;

15 mounting the electronic component on a circuit board by aligning in position the electrode of the electronic component with an electrode of the board with interposition of an anisotropic conductive layer in which an insulating resin mixed with an inorganic filler is mixed 20 with a conductive particle without leveling the formed bump;

25 subsequently metallically bonding the gold bump to the electrode of the board with supersonic waves applied while shaping a tip so as to prevent collapse of a neck portion of the gold bump with a load applied from an upper

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